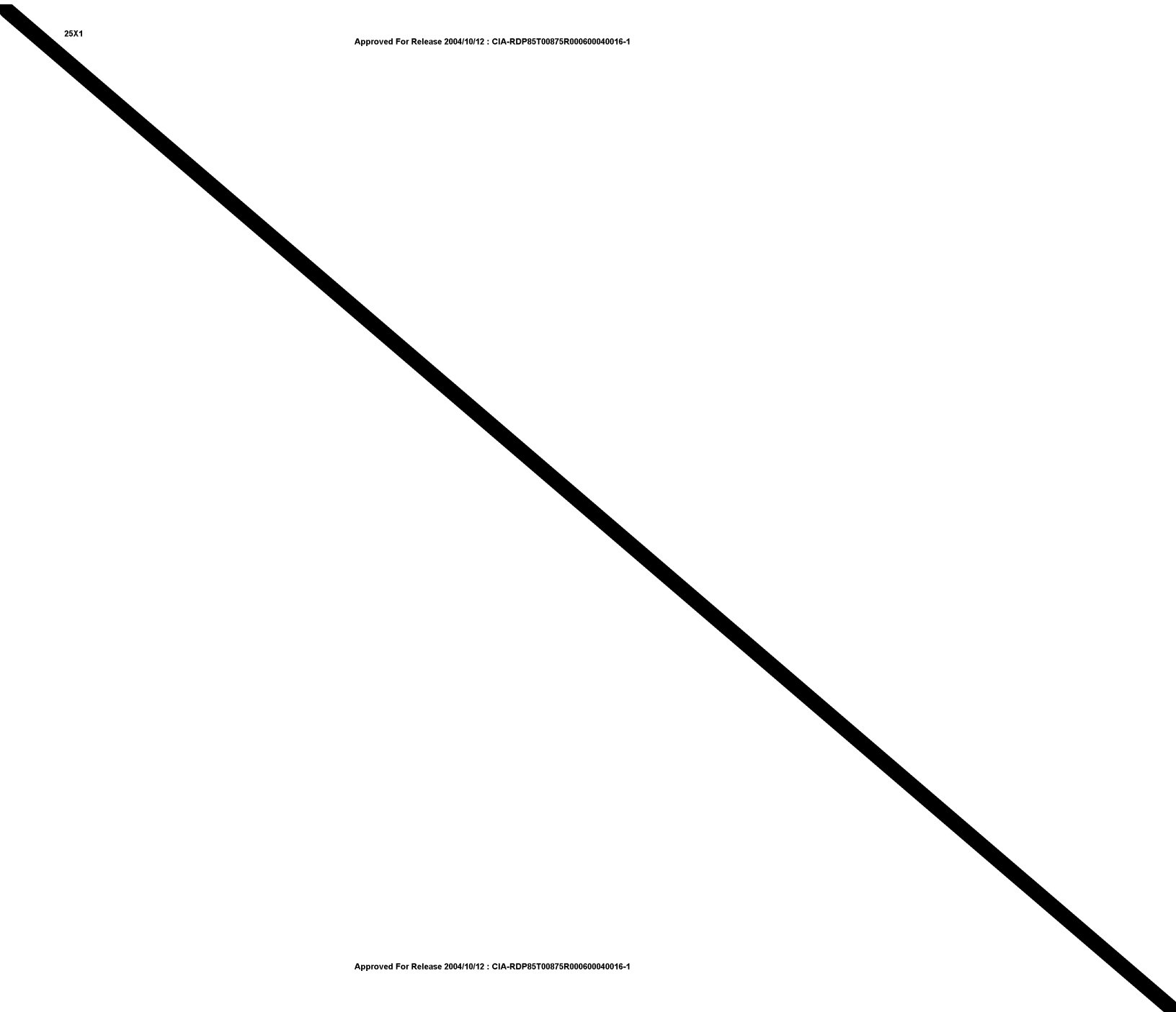

Confidential

Regional Development in Southern Venezuela: The Planners Have Some Problems

Confidential

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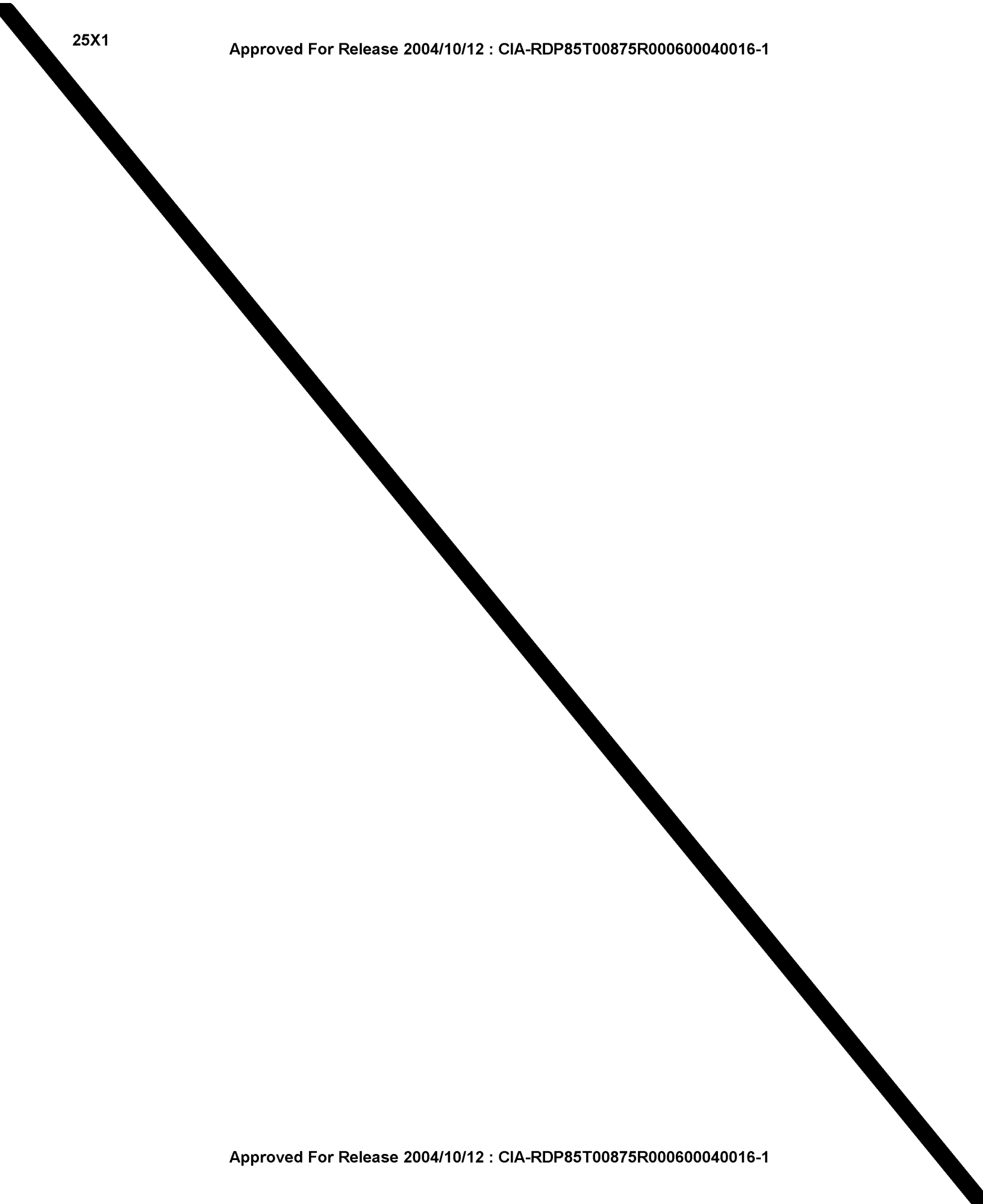

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Central Intelligence Agency
Directorate of Intelligence
May 1974

SUMMARY

CODESUR, one of Venezuela's eight regional authorities, plans to begin development of southern Venezuela by improving the waterways, building airfields, and constructing a network of roads. Once penetration routes are established, it can proceed more rapidly with its modest plans for agricultural colonization. Although the soils have considerable agricultural potential, the agricultural development program will be limited by the large capital expenditures required to convert tracts of rain forest to cropland and to introduce modern farming methods. Recent mineral discoveries, on the other hand, may prove valuable enough to warrant the large capital investments needed for their development. If so, some of the basic support facilities constructed for the mining industry could also support other economic activities, such as agriculture and forestry. CODESUR hopes to develop methods of economically exploiting its heterogeneous forest stands and to increase forest-gathering activities. Establishment of civilian/military population centers along with the gradual acculturation of the indigenous population will contribute to the effort to make the south a vital part of Venezuelan national territory.

REGIONAL DEVELOPMENT IN SOUTHERN VENEZUELA

The Planners Have Some Problems

1. Encouraged by the spectacular success of its first regional development authority, the Government of Venezuela proceeded to establish seven more authorities, one for each of the eight development regions. The Commission for Development of the South (Comision Para el Desarrollo del Sur -- CODELSUR), established in June 1969, was given regional planning responsibility for 240,000 km2 (93,000 mi2) of wilderness that includes all of the Federal Territory of Amazonas and parts of the States of Bolivar and Apure. Comprising more than a quarter of Venezuela's land area, most of the region is covered by tropical rain forest and is virtually unpopulated except along the rivers. It supports less than 1 percent of the Venezuelan people.

2. Although planners hope that CODELSUR will parallel the successful development of the Corporacion Venezolana de Guayana (CVG), the first development authority, there are significant differences in the two regions. CVG was fortunate in having rich deposits of iron ore and bauxite along the northern periphery of the Guayana Region close to established transportation lines, sources of energy, population centers, and land suitable for agricultural development. As a result of the CVG development program, the area now boasts steel, aluminum, and cement plants, two large hydroelectric stations, a rapidly growing urban center of 150,000, and a flourishing agricultural reclamation and settlement program. The developed area, however, represents less than 10 percent of the overall region, and

25X1

few economic or social benefits have yet spread to the relatively inaccessible interior. In terms of its physical environment and general inaccessibility, the CODESUR region is comparable to interior Guayana and not to its developed fringe.

3. CODESUR (a term now used for the area as well as for the Commission and the program) was initiated by the COPEI (Conservative Social Christian Party) administration as part of its economic development program. Given the new administration's intention to focus on domestic matters and find ways to ease social tensions, President Perez will probably wish to capitalize on this initial effort. When former President Caldera made his official visit to Washington in 1970, President Nixon offered to assist in carrying out the program, and the United States subsequently gave $100,000 in AID funds and loaned some aircraft.

CODESUR Goals

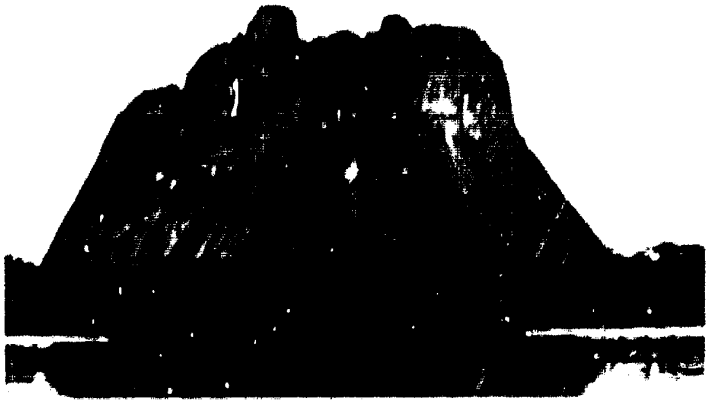
4. The principle objectives of CODESUR, as laid out in the Fourth Plan of the Nation (1970-74) are:

... to bring the presence of the Venezuelan State into the region;

... to raise the socio-cultural and economic standards of the people; and

... to incorporate the riches of the region into the development of the country.

To achieve these goals CODESUR has already initiated several development projects (see Appendix) and has plans for more. The recent discovery of important minerals at Cerro Impacto has given the program economic impetus, and concern over Brazilian plans to colonize its adjacent Amazonian lands has spurred rapid movement to make the CODESUR region a vital part of Venezuelan national territory.



Piedra de Cocuy a typical tepui forms a picturesque backdrop for the newly founded border town of San Simon de Cocuy.

Penetration of formidable physical environment is not easy even with help of modern equipment.

The Environment

5. CODESUR includes much of the upper part of the extensive Orinoco River basin. From highlands along the Brazil-Venezuela border, irregular belts of mesas and hills project toward the west and north, separating lowlands along the middle Orinoco, and the Ventuari, Casiquiare, and Negro Rivers. The high mesas (referred to locally as *tepuyes*) have sheer sandstone escarpments, which provide a spectacular scenic backdrop for the area.

6. Except for areas of open savanna, primarily in the north, the region remains largely unexplored. Tropical forests, which thrive under the climatic regime of high temperatures and abundant rainfall throughout the year,* cover about two-thirds of the region. The dense vegetation, together with steep slopes in parts of the highlands and soggy terrain in the lowlands, has hampered ground exploration. Similarly, a high frequency of cloud cover and heavy rains have impeded aerial reconnaissance and photo-mapping. Most exploration, therefore, has been by dugout canoe. Although the streams of the region are interrupted by numerous rapids, the dugouts, some with outboard motors, can negotiate all but the larger rapids and can be portaged around those.

7. With the development of side-looking airborne radar (SLAR) as a means of penetrating cloud cover, CODESUR gained a practical tool for mapping its area and assessing the resource potential. Coverage of the area by SLAR has now been completed, reconnaissance-scale maps are being compiled, and information on which to base developmental planning is at last becoming available.

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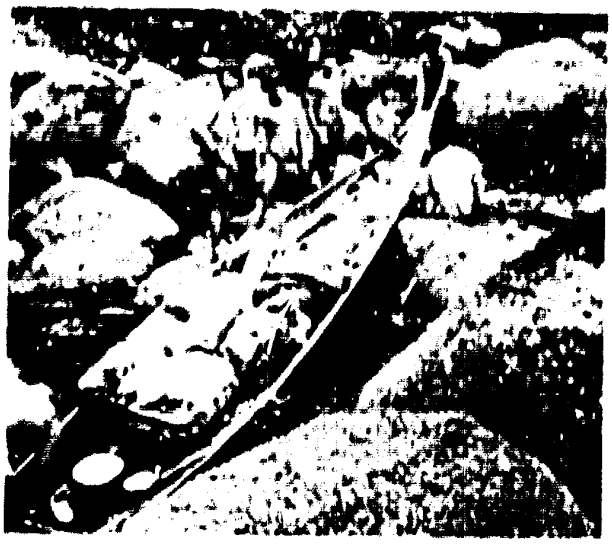
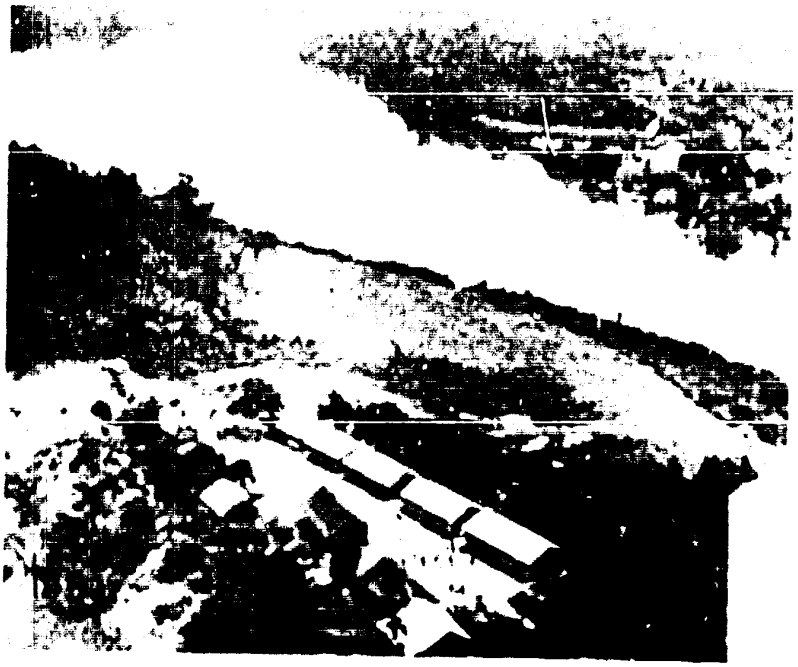
* *Rainfall averages 20 to 38 cm (8 to 15 inches) monthly, Washington D.C.'s average for July, its wettest month, is 12.4 cm (4.9 inches). Temperatures average close to 27°C (80°F) for every month.*



Makiritares Indians encounter difficulties with navigation on a tributary of the upper Orinoco in the dry season.

Tamatama, where the Brazo Casiquiare joins the upper Orinoco.



Transportation

8. Development of CODELSUR has been greatly hampered by its inaccessibility, and the opening of access routes is the region's most urgent need. Until recently, commercial transportation has been confined to the waterways except for the 95-kilometer (60-mile) road constructed to bypass the Atures and Maipures Rapids (raudales) on the Orinoco. Water, land, and air networks are now planned to complement one another to make the entire area accessible for development.

9. There is regular navigation by shallow-draft river boats on the Orinoco River between Puerto Ayacucho and ports downstream. The controlling depth is 2 meters (6 feet) in the dry season. Navigation between Puerto Ayacucho and Samariapo is interrupted by rapids, but upriver from Samariapo launches operate year-round on the Orinoco as far as La Esmeralda and on its tributary, the Rio Ventuari, to San Juan de Manapiare. Dugouts ply the upper reaches of the main rivers beyond the operating range of the launches. A natural waterway navigable by launches, the Brazo Casiquiare, connects the Orinoco and the Rio Negro, a tributary of the Amazon. This unusual stream, extending across the water divide between two river basins, is an example of the partial capture by one stream, the Rio Negro, of the headwaters of another, the Rio Orinoco. Although the Brazo Casiquiare is sluggish, shallow, and meandering, at present it and the Rio Negro provide the only practical means of surface communication between the CODELSUR region and Brazil.

10. Although a navigable link between the lower Orinoco and the Amazon is a long cherished dream of many Venezuelans, efforts to interest Brazil in such a project have failed. Brazilian authorities maintain that the waterway is a futuristic project without economic foundation. Nevertheless, on 31 March 1973, the Venezuelan Ministry of Public Works announced that the CVG, the National Institute of Waterways, and the National Hydraulic Laboratory will prepare proposals for a canal to connect the Orinoco and Negro Rivers within southern Venezuela -- presumably, connecting the Rio Atabapo, an Orinoco tributary, and the Rio Guainia, a Negro tributary, in order to bypass the roundabout Brazo Casiquiare. Details

are lacking, but the project will probably also include elimination of the Atures and Maipures Rapids, either by blasting a deeper channel or by damming the river at Puerto Ayacucho and constructing a system of locks. The announcement did not specify the types and volume of commodities to be transported on the improved waterway.

11. CODESUR's highway construction plans call for a 1,211-kilometer (752-mile) network of roads. Work has been completed on a road system within the San Juan de Manapiare basin, and the penetration road from Caicara is under construction. It is planned to continue this road southward to the southern border with Brazil. Shortages of construction materials, heavy rains and seasonal flooding, and the task of forest removal make road construction difficult and costly. CODESUR considers the forest barrier so formidable that it is considering the possibility of using defoliants as a tool in the clearing process.

12. Some 20 landing strips have been built throughout the region, and several existing airports have been improved. The Puerto Ayacucho and San Juan de Manapiare airports now have control towers, beacon systems, and runways capable of handling C-130's and DC-3's.

Agricultural Potential

13. Optimists see the rain forest of the CODESUR region as the expression of a rich environment capable of supporting a large agricultural population. Paradoxically, rain forests grow on some of the world's least fertile soils, generally unsuited to permanent cultivation without the introduction of costly modern farming practices. The lush vegetation derives from a fragile ecological balance -- a continuous recycling of nutrients between the soil and plants. At any given time the bulk of the nutrients is held within the plants rather than the soil, and if the forest is cut, breaking the nutrient cycle, only a minimal nutrient reserve remains in the soil.

14. The shifting cultivation practiced by the Indians is one way of adapting to the low natural fertility of the soil. This is a primitive system of land rotation whereby a patch of forest is cleared and cultivated for 2 or 3 years and then is abandoned as the soil nutrients are depleted and yields decline. Natural regrowth of vegetation and regeneration of the soil occur gradually, and after a period of 5 to 15 years the plot may again be cleared and cultivated. The system works well in sparsely populated areas; but, as population increases, the competition for land ususally results in a shortening of the fallow period, and progressive exhaustion of the soil follows.

15. The soils that occur in the highland areas of CODESUR are better suited than most tropical soils to traditional (low capital input) farming practices -- particularly for deep-rooted perennial crops such as sugarcane. Although research on tropical soils is still in its infancy, there are indications that these soils could reach high to very high productivity levels with the proper application of fertilizers and with the introduction of mechanized farming techniques where slopes are not excessively steep. Erosion and leaching become problems when ground is bared for mechanized cultivation in the rainy tropics; but the favorable physical properties and high structural stability of the soils in this area reduce the risk of erosion to a minimum.

16. The lowland soils of the region vary considerably in their agricultural potential. Those not subject to flooding have considerable development potential for mechanized farming and for cattle ranching, but they are not well suited to traditional farming methods. On the other hand, the natural fertility of the soils on seasonally flooded land is maintained at a relatively high level through the deposition of silt by flood waters, and traditional cultivation and cattle grazing can be practiced on the better drained lands during the low water season. With the construction of drainage and flood control works, these heavy clay soils could be cultivated much more intensively.

17. Although the soils of the region have considerable potential for producing high crop yields under modern farming methods, large capital expenditures will be required to convert any sizable tracts of rain forest to modern mechanized farms. In addition to the basic need for clearing and preparing the land for cultivation, chemical fertilizers and a whole array of facilities -- access roads, telecommunication nets, sources of energy, storage and marketing, credit establishments, agricultural extension and educational and medical services -- would have to be provided for a successful agricultural program.

18. The CODESUR plans for agricultural colonization are quite modest and appear realistic. The planners believe that colonization of the San Juan de Manapiare basin will be economically feasible when the road under construction from Caicara has been completed. Plans call for moving some families with agricultural experience into the area even before then, with a market for their products guaranteed through the Corporacion de Mercadeo. Credit will be granted by the Agricultural Bank and the Agronomy Institute, and the army and navy will help with the transportation of products to market. In addition, CODESUR is encouraging cattle raising on available grasslands along the northern periphery of the region on the Orinoco.

Minerals

19. The discovery by radar survey of the Cerro Impacto "mineral mountain" gave a considerable boost to the CODESUR program. This find, "100 kilometers from San Juan de Manapiare," has the appearance of a meteoric *tepui*, or mesa, 500 meters high, 1 kilometer wide, and 6 kilometers long. Geologists have determined that it contains thorium, uranium, niobium, manganese, and iron. The site can be reached only by helicopter, and Venezuela has released very little information regarding its exact location or the size of its reserves.

20. A discovery of "great quantities" of manganese in the center of Amazonas Territory, near the headwaters of Rio Paru, was announced in May 1973. The vague terms used to describe minerals and their location may be due to the

desire of CODESUR and Ministry of Public Works officials to keep mining strictly a Venezuelan venture, however, surveys and investigations have not been completed, and sufficient data may not yet be available.

21. Presently, mining in the region is limited to small ventures such as the helicopter-supported diamond operations south of Cuchivero. Helicopters fly food, mining supplies, fuel, and passengers into the rain forest, where alluvial diamonds are washed from stream beds. It is doubtful that operations producing minerals of less unit value than diamonds could bear the cost of air transport. Individual prospectors stake out small claims and start digging for their fortunes, but no large mining companies yet operate in the area. A Franco-Venezuelan exploration party discovered bauxite, gold, and other minerals in Amazonas Territory in 1951, but the lack of transportation facilities blocked exploitation.

Forest Products

22. There is much valuable timber in the tropical forests. So many different species of trees occur, however, that uneconomically large areas would have to be exploited to find enough trees of any given species. A comprehensive experimental project is planned, with assistance from the French, to develop an industry that will use all the various species in a given area.

23. With the decline of rubber operations after World War II, the gathering of *chiquichiqui*, a long-fiber palm that grows in the rain forest, became a means of ready cash for the natives. Originally used as roofing material for Indian dwellings, this fiber is now used to make brooms, mats, and bags. Other minor forest products are chicle and *cade*, an oil-producing palm.

Indian Acculturation

24. There are some 20 Indian tribes in the region. These primitive, seminomadic people, living in relatively peaceful coexistence, subsist on shifting cultivation supplemented by hunting and fishing. Except around the

A military/civilian center, Solano, in the throes of construction.

The presence of the national government in CODILSUR: the Rio Negro Hydrology Office of the Ministry of Public Works.

established missions their numbers can only be estimated. A 1973 CODESUR publication gives the censused population for the region, including acculturated Indians, as 29,444. The estimate for nonenumerated forest Indians ("indiogna selvatica") is 21,520.

25. Indian missions have been in the area for many years. Under a 1937 agreement, the Salesian Society (Roman Catholic) established a mission with jurisdiction over the entire federal territory of Amazonas and has built schools, medical facilities, and a museum of Indian lore and wildlife. The New Tribes Mission (Protestant) has been active in the Territory since 1948. Although it has not been given official status, this mission has been commended by the Government for its efforts to bring civilization to the Indians by divising an alphabet for the Indian languages and by creating a basis for economic exchange. Having taught the Indians to read and write their own languages, the missionaries can now teach them Spanish -- one of the prerequisites for becoming part of the Venezuelan nation.

26. Although foreigners, including missionaries, are legally forbidden to live in border areas, the Frontiers Commission has softened its enforcement policy with respect to the missionaries because of the great strides they have made toward Indian acculturation. The officials have "looked the other way" in order to allow the missionaries to continue their work with the Indians and their maintenance of airstrips for CODESUR in border areas.

27. The missionaries and other groups interested in protecting the Indians have opposed a CODESUR plan to include safaris into Indian territory as part of a program to develop tourism. CODESUR officials now concede that the safaris would not be desirable.

Population Centers

28. CODESUR has planned civilian/military population centers at Solano, Santa Lucia, and other frontier locations to show the flag and protect the borderlands from encroachment by Brazil or Colombia. A larger town, with a civic center as

well as residential and commercial buildings, is under construction at San Simon de Cocuy -- at the southern tip of Amazonas Territory where the borders of Colombia, Brazil, and Venezuela meet.

29. A program for constructing schools and public health buildings is underway in San Fernando de Atabapo, Puerto Ayacucho, San Juan de Manapiare, Maroa, and San Carlos de Rio Negro. Dispensaries are to be established throughout the region. The proliferation of disease vectors under conditions of high temperature and excessive moisture accentuates the problem of health care in the tropics. Common illnesses occurring in the CODESUR region include malaria, diarrhea, blindness, measles, and skin lesions. Available statistics indicate that respiratory and intestinal diseases are the principal causes of death.

30. Other projects include a School for the Advancement of Indians in Santa Barbara, a cultural center in Maroa, and an auditorium in San Carlos de Rio Negro. An educational radio station at San Juan de Manapiare, "Voice of CODESUR," broadcasts in several Indian languages as well as in Spanish.

Outlook

31. CODESUR is a long-range program planned to give impetus to the slow process of integrating the region into the national life of the country. Tangible results have been few, and CODESUR is unlikely to present a highly visible profile, comparable to that of CVG, for many years. Completion of the SLAR survey was only the first important step in providing a solid data base from which preliminary economic feasibility studies can be made.

32. Insufficient data have been released to indicate the significance of the mineral finds. It is possible that the development of rich mineral reserves, together with forest and agricultural products, will eventually generate sufficient need for low-cost bulk transportation to justify canalizing the lower and middle reaches of the Orinoco.

There seems to be little justification, however, for constructing a waterway between the Orinoco and the Amazon. There is little basis for exchange of agricultural and forestry products between the Amazonian regions of Brazil and Venezuela, and Brazil is already developing its own wealth of mineral reserves.

33. The modest program of agricultural colonization in the San Juan de Manapiare basin appears realistic, but dreams of settling large numbers of people from overpopulated parts of the country in the empty rain forests do not seem feasible. The costs for economic and social infrastructure would be high, and modern mechanized farming tends to be capital intensive rather than labor intensive. For the most part, the plans to establish small settlements in the border areas represent token efforts to show the flag, rather than serious efforts to establish viable agricultural nuclei.

34. CODESUR undoubtedly has various resources that can and should be developed, and practical steps toward diversifying the national economy -- now overly dependent upon oil -- should be encouraged. The region cannot, however, be fully integrated into the national economy within a short time.

APPENDIX

Development Projects

From statements made by Minister of Public Works in June 1973 after an inspection tour of the projects underway in CODESUR.

Roads

Completed:
- San Juan de Manapiare internal road system
- Minicia - San Fernando de Atabapo
- Santa Barbara - San Antonio
- Puerto Ayacucho - Puerto Paez

Under Construction:
- Caicara - San Juan de Manapiare
- Samariapo - San Pedro
- La Urbana - North South Main Road
- Santa Lucia - San Simon de Cocuy
- Maroa - Yavita - Pimichin

Air Strips

Completed:

Tamatama	Tencua
San Simon de Cocuy	Ocamo
Platanal	Cabruta
San Juan de Manapiare	La Urbana
San Carlos de Rio Negro	Parima
Maroa	San Antonio
Puerto Ayacucho	Sipapo
	Yutaje

Buildings

Completed:
- School for the Advancement of Indians in Santa Barbara
- Educational Radio Station at San Juan de Manapiare
- 19 schools for 1,750 students
- Dispensary in Ocamo
- Public Health Stations in Tencua and Solano

Under Construction:
- Civic Center in San Simon de Cocuy
- Auditorium in San Carlos de Rio Negro
- Cultural Center in Maroa
- Health Stations in Santa Rosa de Amanadona, Tencua, Ocamo, Platanal, and Boca Mavaca

Map II